

Liverpool John Moores University

Title: Advanced Cellular Biochemistry
Status: Definitive
Code: **6203CHMBIO** (117128)
Version Start Date: 01-08-2010

Owning School/Faculty: Pharmacy & Biomolecular Sciences
Teaching School/Faculty: Pharmacy & Biomolecular Sciences

Team	Leader
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Academic Level: FHEQ6 **Credit Value:** 12.00 **Total Delivered Hours:** 32.00

Total Learning Hours: 120 **Private Study:** 88

Delivery Options

Course typically offered: Summer

Component	Contact Hours
Lecture	15.000
Practical	7.000
Workshop	8.000

Grading Basis: 40 %

Assessment Details

Category	Short Description	Description	Weighting (%)	Exam Duration
Report	Ass1		40.0	
Exam	Exam		60.0	2.00

Aims

To provide an understanding of important current aspects of cellular biochemistry at an advanced level.

Learning Outcomes

After completing the module the student should be able to:

- LO1 Discuss important topics in cellular biochemistry
- LO2 Analyse experimental data
- LO3 Read and interpret the scientific literature

Learning Outcomes of Assessments

The assessment item list is assessed via the learning outcomes listed:

practical write-up	LO 1	LO 2	LO 3
Final assessment	LO 1		

Outline Syllabus

To allow for flexibility in delivery of the module only four of the five topics below will be delivered in any one year.

Biochemical properties of membranes and how these properties govern the movement of molecules across such membranes.

The communication of extra-cellular signals across the cellular membrane and how these signals are then communicated to the rest of the cell (G-proteins).

How cells respond to growth factors in the context of cell division and the cell cycle.

The role of the cytoskeleton as the superstructure of the cell. Structure/function relationships between components of the cytoskeleton will be investigated. Advanced cellular imaging techniques and techniques to investigate the mechanical properties of cells will also be detailed.

Advanced biochemical toxicology detailing the adverse effects of xenobiotics on cellular structures such as the plasma membrane and cytoskeleton will be detailed. The complex relationship between apoptosis and necrosis will also be investigated.

Learning Activities

Learning activities will include the use of lectures, workshops and a practical.

References

Course Material	Book
Author	Stryer, L.
Publishing Year	2006
Title	Biochemistry
Subtitle	
Edition	6
Publisher	W.H. Freeman
ISBN	

Course Material	Book
Author	Alberts, B
Publishing Year	2010
Title	Esseential cell Biology
Subtitle	
Edition	
Publisher	Garland Publishing
ISBN	

Course Material	Book
Author	Lodish
Publishing Year	2008
Title	Molecular Cell Biology
Subtitle	
Edition	6
Publisher	W.H. Freeman
ISBN	

Course Material	Book
Author	Alberts, B
Publishing Year	2008
Title	Molecular Biology of the Cell
Subtitle	
Edition	5
Publisher	Garland Publishing
ISBN	

Course Material	Book
Author	Morgan
Publishing Year	2007
Title	The Cell cycle:Principles of Control
Subtitle	
Edition	
Publisher	New Science Press, Ltd
ISBN	

Course Material	Book
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Author	Hancock, JT
Publishing Year	2005
Title	Cell signalling
Subtitle	
Edition	2
Publisher	Oxford University Press
ISBN	

Course Material	Book
Author	Timbrell, JA
Publishing Year	2008
Title	Principles of Biochemical Toxicology
Subtitle	
Edition	4
Publisher	Informa Healthcare
ISBN	

Notes

This module is designed to develop the students understanding to an advanced level of critical processes and structures of the cell. This will be achieved through the use of lectures, workshops and a practical, the latter of which will also encourage the development of critical analysis of experimental data and interpretation of scientific literature.